



# Math Study Strategies

## Math for Nursing Pediatric

The nurse needs to administer ampicillin 50 mg/ kg every 4 hours. On hand is 1.5 gm vial which must be reconstituted with 4 mL of sterile water to yield 375 mg/ mL. The child weighs 88 lbs. How many mL will you give per a single dose?

- a) The physician prescription is **50 mg** per each **kg** body weight administered **every 4 hours**
- b) What is asked? **mL/single dose**
- c) What is on hand? **1.5 gm vial** and the label shows that the dry medication needs to be reconstituted with **4 mL of steril water to yield 375 mg for each mL**
- d) The patient who needs to receive this medication weighs **88 lbs.**

Start with the unit you are looking for  $\frac{1 \text{ mL}}{375 \text{ mg}}$

Convert the patient weight from **pounds** to **kg** using the equivalency ratio.

$$\frac{1 \text{ kg}}{2.2 \text{ lb}}$$

It is asked also that the medication is administered every 4 hours per day.

$$\frac{24 \text{ times}}{4 \text{ hours}} = 6 \text{ times}$$

Writing the dimensional analysis

$$\frac{1 \text{ mL}}{375 \text{ mg}} \times \frac{50 \text{ mg}}{\cancel{\text{kg/day}}} \times \frac{1 \cancel{\text{kg}}}{2.2 \cancel{\text{lb}}} \times \frac{88 \cancel{\text{lb}}}{\text{patient}} \times \frac{\cancel{\text{day}}}{6 \text{ dose}} = \frac{4400}{4950} = 0.88 \text{ mL}$$

Therefore the given medication will be **0.88 mL (or cc) per dose**